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A Manual for the Study of Insects. By JOHN HENRY COMSTOCK AND ANNA BOTSFORD COMSTOCK. 5th ed revised. Ithaca, New York: Comstock Publishing Co., 1907. Pp. xi+701.

This manual has been the standard textbook of the insects of this country ever since the publication of the first edition in 1895. It was written in order to provide in one volume a general account of all the orders and families together with analytical keys. It was of course impossible to consider in detail even a small proportion of the thousands of species of insects that have been described. The authors have made an effort to select those species that are of economic importance, and have given clear accounts of their life-histories, and the methods of destroying those that are noxious. This has made the book of special value to agricultural students. Throughout the volume there is an evident attempt to make the study of entomology as simple as possible without sacrificing accuracy. A great advance toward a unification of the entire subject was made by the senior author when he succeeded in bringing order out of the systems of naming wing-veins. Homologous wing-veins, contrary to the previous custom, have been given the same terms throughout all the orders of insects. The plan of the volume is as follows: An instructive introduction passes in review the near relatives of the insects—Crustacea, Arachnida, and Myriopoda. The general characteristics of insects are then briefly considered, after which a chapter is devoted to each order. Anna Botsford Comstock is responsible for many excellent wood-cuts. Mr. E. P. Felt and Mr. R. H. Pettit have also furnished a number of the illustrations.

First Course in Biology. By L. H. BAILEY AND WALTER M. COLEMAN. New York: Macmillan, 1908. Pp. xxv+592. \$1.25.

This book is a departure from any heretofore published, for it not only considers as usual the biology of plants and animals, but has a third co-ordinate part relating to the human body. We have naught but praise to offer for this new addition, as children, and adults also, know very little about themselves and are slow to apply to their own persons the principles of biology learned in their study of the plants and lower animals.

Professor L. H. Bailey is responsible for Part I, "Plant Biology," 204 pages. As might be expected from the contents of his previous textbooks, he has treated his subject from the nature-study standpoint and has endeavored, we think with success, to interest the student in the plants with which he comes in daily contact, by a general knowledge of how these organisms live, grow, and reproduce. Those familiar with this author's *Botany* and *Lessons with Plants* need no further exposition of the first part of the text under consideration.

Part II, "Animal Biology," 224 pages, is by Walter M. Coleman. Here the "logical order" of study is pursued by introducing the protozoa first and working up the scale of life to the vertebrates. We do not consider this the best method of treatment because of the difficulties connected with the study of unicellular animals. We shall not, however, state the arguments pro and con, but refer the reader to a good discussion of this subject in chap. vi on "The Teaching of Biology in the Secondary School," by F. E. Lloyd and M. A.

Bigelow. Mr. Coleman has reinforced the study of the structure of the various types by accounts of the physiology of the different organs, the economic importance of the animal, and the methods of collecting.

Part III, "Human Biology," 164 pages, also by Mr. Coleman, fills a need which has only recently been recognized by textbook writers. We would compare this part of the volume to *The Human Mechanism*, by Theodore Hough and W. T. Sedgwick. The following is the order of subjects: The skin and kidneys, the skeleton, the muscles, the circulation, the respiration, food and digestion, the nervous system, the senses, bacteria, and sanitation. At the beginning of each chapter are helpful experiments introducing the student to the actual physiological processes to be studied.

A quotation from the preface will give a good idea of the arrangement of the subjects advised by the authors: "If the course in biology begins in the fall (with the school year), it may be well to study plant biology two days in the week and animal biology three days, until midwinter; when outdoor material becomes scarce, human biology may be followed five days in the week; in spring, plants may be studied three days and animals two days." The book is profusely illustrated in the text and also contains four colored plates which are of value for the proper teaching of biology.

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Elementary Algebra. By J. W. A. YOUNG, PH.D., AND LAMBERT L. JACKSON, PH.D. New York: D. Appleton & Co., 1908. Pp. 438.

During the past few years there has been no lack of criticism of the traditional course in algebra. It has been pointed out with the utmost clearness that the course is unsuited to immature boys and girls just entering the high school, that it is too abstract, and that it lacks all connection with real life. In response to this sentiment, some slight modifications have appeared in many of the recent textbooks mainly in the introduction of graphical methods and in the elimination of certain topics. The book under consideration represents another step toward the new algebra.

Although the authors were hampered by the necessity of providing for the prevailing requirements for admission to college, they have made a book which, in many respects, appears new. It is evidently planned with due regard for the capacity of the high-school student and with the purpose of convincing him from the beginning that algebra is good for something.

The first few chapters are devoted to an interesting transition from arithmetic to algebra, in which the value of algebraic symbols for making statements in abbreviated form is explained, and the use of the equation is illustrated by simple problems. The negative number is not introduced until chap. iv.

New topics are as a rule presented inductively. Various simple examples, often relating to arithmetical data, are first considered, from which a general relation is inferred. This is followed by a variety of oral exercises and finally problems requiring written work. At the end of each chapter is a summary.

The arrangement of topics suggests the "Spiral" course in arithmetic.